

**MULTI-PIXEL AND MULTI-COLUMN ELECTRON EMISSION  
INSPECTOR**

**Abstract of the Disclosure**

One embodiment disclosed pertains to an inspection system for inspecting a specimen. The system includes a plurality of columns for directing a plurality of multi-pixel incident beams onto a plurality of multiple-pixel regions of the specimen. Impingement of said incident beams causes emission of electrons from the regions. The system further includes a plurality of multiple-pixel electron detectors, each said detector configured to detect in parallel electrons emitted from a plurality of pixels in one of the regions, and a plurality of processing sub-systems. Each said sub-system is configured to process data from one of said detectors. Advantageously, throughput for an inspection system in accordance with an embodiment of the invention may be increased by approximately a factor of  $N$ , where  $N$  is the number of columns in the system.